"the vicinity, or from any other mine. When a diamond is "brought to them, it is immediately handed to the eldest "boy, who is tacitly acknowledged as the head of this little "band. By him it is carefully examined, and then passed "to his neighbour, who, having also inspected it, transmits "it to the next boy. The stone is thus passed from hand "to hand amid unbroken silence, until it returns to the hand "of the eldest, who then asks the price, and makes the "bargain. If the little man is thought by his comrades to "have given too high a price, he must keep the stone on his "own account. These children are so perfectly acquainted "with the value of all sorts of gems, that if one of them, "after buying a stone, is willing to lose one-half per cent. "on it, a companion is always ready to take it."

ART. XXVII.—*On Water Supply and Irrigation.* By F. C. CHRISTY, Esq., C.E.

[Abstract of paper read 23rd November, 1863.]

The author briefly noted a few of the chief causes of aridity in Victoria during the summer months, and urged such causes as reasons for storing the winter rains.

The average of ten years' rainfall for Victoria is about 28 inches. The average rainfall in Melbourne for six consecutive years from 1840, was 26·679 inches. The average rainfall of England is 26·6 inches.

The following table shows the average for the Spring. Summer, Autumn, and Winter months here and in England.

	Prof. Neumayer's 10 Years' Obs. Inches.	S. Gibbons' 5 Years' Obs. Inches.	Mean of England. Inches.
Spring ...	9·15	9·42	4·929
Summer ...	5·34	4·58	6·927
Autumn ...	7·65	5·68	9·299
Winter ...	7·02	8·26	5·459

The mean evaporation at Melbourne for the three years, 1860, 1861, and 1862, is 44·517 inches.

This amount of evaporation is less felt owing to the greatest rainfall in Victoria occurring during the months of Winter and Spring, when the ground is moderately moist

and cool, and from this cause the catchment areas are capable of yielding the greatest quantity of rain for storage. Practically, fifty per cent. of the rainfall here may be saved for use.

The Yan Yean Reservoir is a fine example of what can be done in this country in collecting and storing winter rains for use, although many prophecied that it would be a failure.

In India, in the Mairwara district, with a much higher temperature than Victoria and a rainfall ranging from only eight inches in some years up to twenty-two inches in others, the country has been successfully irrigated.

The physical features of Victoria are well adapted for the formation of reservoirs for storage purposes—such reservoirs can generally be formed at little cost, owing to the favourable configuration of the surface of the country in localities most suitable for constructing them. Reservoirs can be constructed in the neighbourhood of most of the gold-fields at such moderate cost as to be available for the supply of water at a rate not exceeding from one penny to two pence per 1,000 gallons for either washing gold or as a motive power for machinery.

Italy and India have benefited largely by irrigation. In Italy, upwards of one and a quarter millions of acres are irrigated with success. The soils are variable, being sandy, clayey, and gravelly. On this irrigated ground the temperature is sufficient to grow rice and Indian corn. The heavy, argillaceous soils are available for rice, and the lighter for all the cereals, Indian corn, and varieties of green crops. Prior to the system of irrigation and drainage being adopted on this land, all authorities agree in describing the condition of the country as deplorable in the extreme. The light soils were parched and arid and the heavy soils retained the water and formed pestilential marshes, but now the country is the opposite of all this, rivalling the Milanese in rich productiveness.

The increased rental of the above lands, due to their improved value from drainage and irrigation, is £290,000 per annum, in addition to which the canals, which serve as arteries throughout the country, are an additional source of income.

In India the favourable results of irrigation are equally remarkable to those of Italy. The value of crops raised from land irrigated by canals from the Western Jumna, in the

years 1837 and 1838, amounted to £1,462,800. The land would have been totally unproductive without irrigation. In this last instance the rental paid to the government in two years more than covered the cost of the original outlay. There is an annual balance of revenue over expenditure of £167,136. The area irrigated is 351,501 acres.

The author quoted copiously from Colonel Baird Smith's work on "Irrigation and Drainage in Italy, and also India," and from a return by Major Baker on similar questions.

ART. XXVIII.—*On a Genus of Coleoptera hitherto unfound in Victoria.**—By WILLIAM HENRY ARCHER, Esq.

[Read 16th May, 1864.]

I beg to introduce to your notice this evening an interesting specimen of a beetle, which, as far as I can at present learn, has been hitherto unrecognised within the limits of Victoria. I obtained it from the neighbourhood of the St. Arnaud silver mines, where it was found under an old log, with about a dozen others of varying size, by the Director of the mines, whom I had requested to look out for Natural History objects. When I received them, they were in a small tin canister. Some were dead, and had become offensive. The survivors I found proceeding deliberately to eat each other; and to put an end to this Kilkenny-cat process, I gave them all a protecting *quietus*. The specimen before you is two and a-half inches in length, and about three-quarters of an inch in breadth, a size for a beetle which may well be termed gigantic. From its structure, you will perceive that it has powers of attack and defence of a most formidable character.

My friend, the accomplished naturalist, Count Castlenau, or, as he is quoted authoritatively in scientific writings, M. Laporte, states that: "This beautiful insect belongs to the order *Coleoptera*, to the family *Carabidæ*, and to the tribe *Morionidæ*." It was first described by Schrebers in the "Transactions of the Linnæan Society," under the name of *Scarites Schrœtteri*. Count de Castlenau, curiously enough, years ago, in his "Etudes Entomologiques," separated it from the *Scarites*, and established it as a separate genus, under the name of *Hyperion*. Since then, *Bois-duval*, in

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* See Note in Proceedings.